DRAFT – SUBJECT TO TASK FORCE APPROVAL ON OCTOBER 25, 2021

MEETING SUMMARY
National Artificial Intelligence Research Resource Task Force
Meeting #2

August 30, 2021

Meeting Summary

The second meeting of the National Artificial Intelligence Research Resource Task Force (NAIRR TF) was held online via Zoom on August 30, 2021, at 11:00 AM-5:00 PM EDT.

Welcome and Administrative Remarks

The meeting started at 11:06 AM EDT.

Dr. Erwin Gianchandani (National Science Foundation), NAIRR TF Co-Chair, opened the meeting. Dr. Gianchandani entertained a motion to approve the minutes from the prior NAIRR TF meeting; the motion passed. The minutes will be updated online to reflect their approval. Dr. Gianchandani then introduced the agenda and detailed the three primary goals of the meeting, i.e., to:

1. Further develop the value proposition for the NAIRR;
2. Discuss governance, ownership, and administration options; and
3. Discuss desired compute capabilities.

The session ended at 11:15 AM EDT.

The National AI Initiative and a Baseline Vision for the NAIRR

The session started at 11:15 AM EDT.

Dr. Lynne Parker (White House Office of Science and Technology Policy), NAIRR TF Co-Chair, provided an overview of the National AI Initiative and how the NAIRR TF work is contributing to the overarching objective of the Initiative of ensuring continued U.S. leadership in AI research and development. TF members discussed the presentation and the need for a cost-benefit analysis of the NAIRR, specifically to measure the impact of different types of investments within the large and diverse field of AI.

Dr. Gianchandani presented a vision for aligning strategic goals with aspects of a NAIRR. The strategic objective of a NAIRR is to support fundamental AI research and increase the number and diversity of researchers and organizations engaged in AI research. This could be accomplished by lowering barriers to entry, supporting efforts to broaden participation in AI research as well as AI adoption, and reinforcing the viability of academic career paths in AI. Dr. Gianchandani also presented a set of fundamental questions the TF will have to consider early in its work.

The session ended at 11:36 AM EDT.

Panel: Value Proposition and Intended Outcomes of a NAIRR

The session started at 11:36 AM EDT.

Dr. Parker introduced the panel:

- Damian Clarke, Chief Information Officer and Computer Science Faculty, Alabama A&M University
- James Deaton, Executive Director, Great Plains Network
- Deborah Dent, Chief Information Officer, Jackson State University
- Tripti Sinha, Assistant Vice President and Chief Technology Officer, University of Maryland and Executive Director of the Mid-Atlantic Crossroads (MAX)
- Talitha Washington, Director, Atlanta University Center Consortium Data Science Initiative

Dr. Parker also introduced the objective of the discussion, i.e., to request external input on the foundational questions of the value proposition of the NAIRR and its intended outcomes. Each panelist spoke for 5 minutes, providing their perspectives on the objectives the NAIRR should pursue, the user base it should serve, and what success would look like. Panelists touched on the need to address AI education deficiencies in K-12, to consider different funding models specific to the requirements of under-resourced institutions, to build on communities' regional strengths, to enable cyberinfrastructure professionals (e.g., to do data management and curation), and to empower diverse communities to be true partners in all facets of AI research and development.

Following remarks from each panelist, Dr. Parker moderated a discussion between TF members and panelists. Panelists suggested using the diversity and level of participation as metrics of success, along with data on who has access and who is using the resource. Panelists also discussed the role of multiple governance bodies in assessing AI, the importance of addressing bias and equity in research, fostering public trust, and prioritizing areas of AI that solve problems for public good.

The session ended at 12:50 PM EDT.

Discussion: Defining the Value Proposition and Intended Outcomes of a NAIRR

The session started at 12:50 PM EDT.

Dr. Parker moderated a discussion among TF members on takeaways from the panel discussion. Suggestions included documenting the different types of NAIRR users envisioned, defining and hearing from the user base, and defining the scope of the resource. TF members discussed the difference in resource needs of people applying AI to a problem versus researchers developing AI.

The session ended at 1:00 PM.

Presentation: Ownership, Governance, and Administration Options

The session started at 1:34 PM EDT.

Drs. Emily Grumbling and Lisa Van Pay (Science and Technology Policy Institute) presented findings from research on options and considerations for NAIRR ownership, administration, and governance. This work showed that large, shared research resources are commonly owned by the Federal Government, an academic or private sector organization, or a partnership or consortium. In addition, the type of ownership carries implications for other aspects of use and management of the resource. The owner of a resource is responsible for administering it, but it may employ another entity to fulfill those responsibilities. Governance structures are highly variable and often reflect the organizational structure of the owner. Further, governance structures and entities can be used to manage a range of functions including strategic planning, technical design and operation, and oversight and accountability. Overall, there are many options for ownership, governance, and administration, and design of these structures should relate to the system architecture and be informed by the desired impacts of the NAIRR, the intended users, and the components included in the resource.

The session ended at 1:54 PM EDT.

Panel: Ownership, Governance, and Administration Models

The session started at 1:54 PM EDT.

Dr. Gianchandani introduced the panel:

- Sharon Broude Geva, Director for Innovation and Computational Research, University of Michigan
- Manish Parashar, Office Director, Office of Advanced Cyberinfrastructure, National Science Foundation
- Gina Tourassi, Director, National Center of Computational Sciences and the Oak Ridge Leadership Computing Facility, Oak Ridge National Laboratory
- John Towns, Executive Associate Director for Engagement, National Center for Supercomputing Applications and Deputy Chief Information Officer for Research Information Technology, University of Illinois at Urbana-Champaign
- Frank Würthwein, Interim Executive Director, San Diego Supercomputer Center

Dr. Gianchandani also introduced the intent of the discussion, i.e., to explore the details of various approaches to administration and governance of past and existing research resources, in order to inform thinking for the NAIRR. Each panelist spoke for 5 minutes. Panelists offered multiple lessons learned from their experiences that could apply to a NAIRR, including: removing barriers associated with the mechanics of access to ensure equity broadly; designing access equity and inclusion into the resource allocation process; investing in a national data infrastructure for personally identifiable information (PII) and sensitive data; including instrumentation to measure impact; providing institutional support including legal, intellectual property, and logistical support for financial components; and matching the infrastructure design to the social infrastructure of the intended users.

Following the opening remarks from the panelists, TF members engaged the panel in a discussion. Panelists emphasized the necessity of tracking changing user needs and evolving the resource accordingly. Panelists also discussed resource allocation extremes: the oversubscription of compute resources, as well as the challenge of users not utilizing compute allocations because of difficulty

accessing a resource. Different governance models were also discussed, including the model of a singular executive director with a board, the inclusion of advisory committees, and the role of representatives on a board.

The session ended at 3:03 PM EDT.

Discussion: Compute Capabilities

The session started at 3:30 PM EDT.

Dr. Dan Stanzione (University of Texas, Austin), NAIRR TF member and leader of the Compute Resources Working Group (WG), presented options and primary challenges for the NAIRR TF to consider in terms of compute resources to include in the NAIRR. Dr. Stanzione discussed the growing demand for compute, the difficulties in predicting the amount of compute needed for deep-learning research, and the inevitability that demand for compute will outrun supply. Dr. Stanzione raised questions for the WG to consider, including:

1. What the right mix of software/hardware is;
2. Whether to collocate compute and data resources; and
3. How to make decisions on performance versus usability tradeoffs.

After the presentation, Dr. Stanzione moderated a discussion among the TF members. The TF debated estimates on the amount of computational resources needed, agreeing that further definition of the intended user base and scope of the resource was necessary. Other suggestions included using a federated model to provide different types of resources based on user needs, and splitting the total compute provided by a pre-fixed percentage, between the few researchers who need high levels of compute and the many who likely require significantly lower levels. Members also discussed different ways to measure the costs of compute time and the benefits to science.

The session ended at 4:29 PM EDT.

Working Group Expectations

The session started at 4:29 PM EDT.

Dr. Parker presented the next steps for Working Groups (WGs). The next TF meeting is on October 25 and will explore the topics of data management, user interfaces, and testing resources. In addition, two WGs will convene between now and the next meeting:

- Governance Models, led by Dr. Fred Streitz; and
- Compute Resources, led by Dr. Dan Stanzione.

The WGs are tasked with developing draft recommendations to present for consideration by the full TF at the October meeting. The WGs will provide a briefing at the October meeting summarizing the proposed recommendations and rationale for how they were established.

TF members agreed that the WGs should share notes during the last week of September, and the WG leads should meet to iterate on their initial findings and recommendations. Dr. Gianchandani noted that

a document exploring the intended users of a NAIRR will also be shared during the last week of September for iteration via email.

The session ended at 4:45 PM EDT.

Questions from Public and Meeting Close

The session started at 4:45 PM EDT.

Dr. Gianchandani moderated a discussion among TF members of questions submitted by attendees via Zoom's Q&A portal, discussing how to measure U.S. leadership in AI research, the importance of data governance, and the role of the future National AI Advisory Committee, among other topics.

Dr. Gianchandani concluded the session, thanking members of the TF, NSF, OSTP, STPI, and the public. Meeting summaries, slide presentations, and details about upcoming meetings can be found at https://www.ai.gov/nairrtf/.

The next meeting is scheduled for Monday, October 25, with details already posted to the Federal Register.

The meeting adjourned at 5:00 PM EDT.

Appendix I: Attendance for NAIRR TF Meeting 2

TF Members Present:

Erwin Gianchandani, National Science Foundation (Co-Chair)

Lynne Parker, White House Office of Science and Technology Policy (Co-Chair)

Daniela Braga, DefinedCrowd

Mark Dean, retired (formerly IBM and University of Tennessee, Knoxville)

Oren Etzioni, Allen Institute for AI

Julia Lane, New York University

Fei-Fei Li, Stanford University

Andrew Moore, Google

Michael Norman, University of California, San Diego

Dan Stanzione, University of Texas, Austin

Frederick Streitz, Department of Energy

Elham Tabassi, National Institute of Standards and Technology

TF Members Absent:

None.